

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

3 - Advanced technology development

PE NUMBER AND TITLE

**0603007A - Manpower, Personnel and Training
Advanced Technolo**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
Total Program Element (PE) Cost		8811	8070	6783	7024	7236	7271	7337	7396
792	PERSONNEL PERFORMANCE & TRAINING	4822	7112	6783	7024	7236	7271	7337	7396
79A	PERSONNEL & TRAINING ADV TECH INITIATIVES (CA)	3989	958	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This Program Element (PE) funds the Army's behavioral and social science advanced technology development program that provides non-materiel solutions to transform the human warfighter in concert with the technological transformations in systems, weapons, equipment, and the changes in mission requirements to meet the goals of the Future Force. The program also exploits opportunities to enhance Current Force capabilities. The advanced technology development in personnel, training, and leader development conducted in this program provides the tools to retain the highest quality Soldiers; train and develop Soldiers to keep pace with technology and mission demands as they evolve; build effective teams and units; shape cultural mind-sets for joint operations; and understand and improve attitudes and motivation to enhance unit performance. One goal of this program is to develop technologies to reduce training and personnel costs and, at the same time, improve individual and unit performance by leveraging the advances in live, virtual, and constructive simulations. Another goal is to develop technologies to accelerate the processes associated with training and developing skills, knowledge, and capabilities, as well as, develop tools to sustain learning and retain skills over longer periods of time. This program leverages and coordinates with work at the Institute for Creative Technologies (ICT), Simulation and Training Technology Center (STTC), and US Air Force Research Laboratory (USAFRL). The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). This PE is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI).

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	7288	6981	7166
Current Budget (FY 2006/2007 PB)	8070	6783	7024
Total Adjustments	782	-198	-142
Net of Program/Database Changes			
Congressional Program Reductions	-65		
Congressional Rescissions			
Congressional Increases	1000		
Reprogrammings			
SBIR/STTR Transfer	-153		
Adjustments to Budget Years		-198	-142

Change Summary Explanation:

One FY05 Congressional add totaling \$1000 was added to the PE.

FY05 Congressional Add with no R-2A:

(\$958) Battle Command Team Training (BCTT) Program, Project 79A: The purpose of this one year Congressional add is to fund battle command team training. No additional funding is required to complete this project.

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BUDGET ACTIVITY 3 - Advanced technology development				PE NUMBER AND TITLE 0603007A - Manpower, Personnel and Training Advanced Technolo			PROJECT 792				
COST (In Thousands)				FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
792	PERSONNEL PERFORMANCE & TRAINING			4822	7112	6783	7024	7236	7271	7337	7396
<p><u>A. Mission Description and Budget Item Justification:</u> The objective of this project is to develop, refine, and demonstrate advanced behavioral and social science technologies that enhance performance to ensure that the human warfighter keeps pace with the transformations in systems, weapons, equipment, and mission requirements to meet the goals of the Future Force. The project, when feasible, exploits opportunities to enhance Current Force capabilities. Advanced technology development efforts include: designing new ways to efficiently develop collective training methods and materials; developing and demonstrating training methods and techniques that prepare battle commanders to operate in digitized, networked environments and that facilitate the use of embedded training technologies for Future Combat Systems (FCS); devising strategies to use distributed training technologies to conduct multi-site training, assessment, and feedback; and developing improved tools for selecting personnel for flight training. Other efforts focus on developing leader development tools that capitalize on the various synthetic environments, game technologies, and delivery media (web, Personal Digital Assistant (PDA), etc), that facilitate the advancement of leader knowledge, skills, and abilities (KSAs), and that can provide “virtual mission experiences” to leaders earlier in their career development cycle to foster cognitive flexibility and mission readiness, and on determining the effects of organizational stabilization and increased operational tempo on unit cohesion and Soldier retention and readiness. This program leverages and coordinates with work at the Institute for Creative Technologies (ICT) and Simulation and Training Technology Center (STTC). Work in this PE is related to and fully coordinated with efforts funded in PE0602785. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). This PE is managed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI).</p>											

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Accomplishments/Planned Program			FY 2004	FY 2005	FY 2006	FY 2007
Personnel Technology: In FY04, initiated a longitudinal assessment of the impact of personnel stabilization under Unit Manning on small-unit cohesion; and investigated tools and methods for leaders to use to improve unit climate and teamwork. In FY05, identify factors influencing small-unit cohesion in a stabilized personnel (unit) environment; assess the impact of operational tempo on Soldier attitudes and retention. In FY06, will continue longitudinal (i.e., over time) data collection to assess impact of personnel stabilization and conduct trend analyses to identify most critical factors that influence small unit cohesion; will develop a preliminary model of the effects of operational tempo on Soldier readiness; will develop new test battery to select individuals for Army flight training; will demonstrate improved tools that will more effectively assign aviators to aircraft. In FY07, based on longitudinal research findings will provide lessons learned to DAG-1 and HRC for improving the personnel stabilization process; will continue the analysis of factors that affect Soldier and leader attitudes and retention; will validate new tests for selecting individuals for Army flight training.			1199	1778	1695	1756
Training Technology: In FY04, determined the best combination of simulator and live-fire training to maximize small arms marksmanship proficiency; developed prototype training support packages and conducted trial implementations to expand/refine the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) training techniques and collective performance measurement approaches; and assessed the use of PC-based games for tactics training. In FY05, demonstrate prototype tools to manage and adapt training for changing unit requirements; develop metrics for assessing the training effectiveness of single-user immersive interactive simulations. In FY06, will develop exemplar methods and measures for determining individual and collective preparedness for entry into full-scale networked tactical unit training; will develop instructional guidelines and learning models for single-user immersive interactive simulations and assess effectiveness. In FY07, will refine methods and tools for efficiently adapting networked training to emerging tactical tasks in the future operating environments (e.g., joint, expeditionary, and effects-based operations); and develop a learning model and the metrics for assessing training effectiveness of multi-player immersive interactive simulations.			2424	3556	3393	3512

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Accomplishments/Planned Program (continued)			FY 2004	FY 2005	FY 2006	FY 2007
Leader Development Technology: In FY04, demonstrated mentoring programs and tools that help mid-level unit leaders train and assess leadership skills and adaptability in their subordinates; and demonstrated module for teaching critical thinking skills supported by automated coaching and on-line diagnostic and feedback techniques for company grade leaders. In FY05, determine the most effective methods for leaders to rapidly develop unit cohesion in times of personnel turbulence, stress, and changing operational requirements; evaluate web-based modules for training leaders' critical thinking; identify small group modifications to the "Think Like a Commander – Excellence in Leadership" (TLAC-XL) program and demonstrate computer-based coaching for experiential development of interpersonal skills (this is a cooperative effort with the Institute for Creative Technologies (ICT) to leverage their expertise in immersive simulation environments on the TLAC-XL program). In FY06, will complete and test three additional critical thinking modules; will evaluate and fine-tune Special Operations leader development products and tools for their application to conventional forces; will identify the critical interpersonal communications skills needed to work effectively in network-centric teams. In FY07, will expand instruction tools to enhance leader self awareness in the Future Force; will develop computer-based coaching modules for experiential development of interpersonal skills for Future Force leaders; will determine the key characteristics of effective virtual mentors to maximize learning from mission scenarios in virtual environments.			1199	1778	1695	1756
Totals			4822	7112	6783	7024